

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

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**STATUS REPORT: SAN DIEGO RIVER WATERSHED**

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## **EXECUTIVE SUMMARY**

This report presents an overview of the San Diego River Watershed in terms of geography, land use, hydrology, water quality and Regional Board activities that support water quality. The report shows that water quality in the upper watershed is of much higher quality than the lower watershed, with the watershed divide located at the El Capitan Reservoir Dam. The upper watershed's surface and groundwater quality is high due to the undeveloped nature of that area. The lower watershed's groundwater quality is generally good, with the exception of some localized, shallow contamination. The lower watershed's surface water quality is generally poor; this is due to over 50 years of development and hydromodifications that have adversely impacted surface water quality.

### **1.0 INTRODUCTION**

The purpose of this report is to describe current activities and priorities of the San Diego Regional Water Quality Control Board (SDRWQCB) for addressing water quality issues in the San Diego River Watershed. As discussed in the SDRWQCB's Watershed Management Approach, dealing with complex and intertwined water quality and beneficial use issues, which involve both point and nonpoint sources, requires a comprehensive, coordinated process on the part of the SDRWQCB. By preparing this report, the SDRWQCB is taking an incremental step to integrate its programs and functions to effectively and efficiently address water quality and beneficial use issues in the San Diego River Watershed.

This report is not intended to be comprehensive; rather, it provides an overview that generally describes the drainage area, the population, and the beneficial uses of the water resources in the San Diego River Watershed. The report then also discusses the various SDRWQCB programs and significant water quality and beneficial use issues within the San Diego River Watershed.

Although the report touches upon all RWQCB programs, the discussion is more detailed for the programs that directly relate to urban development. As water quality issues change and evolve, and as comments, feedback, and information is provided to the Board, this report will be updated.

### **2.0 WATERSHED CHARACTERISTICS**

The San Diego River watershed, San Diego Hydrologic Unit, has a drainage area of approximately 440 square miles. It lies within central San Diego County, and includes the Cities of San Diego, El Cajon, Santee, La Mesa, Poway; the unincorporated communities of the County of San Diego: Lakeside, Wynola, Pine Hills, and parts of the unincorporated communities of Alpine, Ramona, and Julian; portions of U.S. Marine Corps' Air Station Miramar; portions of the Cleveland National Forest and Cuyamaca

State Park; and the Barona Ranch, Capitan Grande, Inaja, and Cosmit Indian Reservations.

The San Diego River is the main hydrologic feature of the watershed, originating between the communities of Wynola and Santa Ysabel and next to Highway 78. The main stem of the San Diego River flows approximately 45 miles, through unincorporated San Diego County, the Cities of Santee and San Diego and terminates at Dog Beach, which is between Mission Bay and Pt. Loma (Figure 2-1). For discussion purposes in this report, the watershed is divided into upper and lower watersheds. The upper watershed extends from the Julian area to the western end of El Capitan Reservoir; the lower watershed extends from the El Capitan Reservoir dam to the mouth of the San Diego River at the Pacific Ocean. The differentiation of the upper and lower is very distinct in terms of land use and water quality, as the vast majority of adverse water quality issues occur in the lower watershed where most of the watershed's population resides. This differentiation is also due to hydrology, as the El Capitan dam acts a physical barrier – no surface water flows past the dam unless it is intentionally released or the dam overflows, both of which are very rare.

The San Diego Hydrologic Unit (907) is comprised of the following four hydrologic areas:

- Lower San Diego (907.10)
- San Vicente (907.20)
- El Capitan (907.30)
- Boulder Creek (907.40)

The major tributaries to the river include:

- Forester Creek
- Murray Creek
- Ruffin Canyon Creek
- Alvarado Creek
- San Vicente Creek
- Boulder Creek
- King Creek
- Conejos Creek
- Sand creeks Creek.

## **2.1 PRECIPITATION**

Annual precipitation ranges from an average of less than 9 inches near the coast to more than 35 inches at Cuyamaca Reservoir. Elevations range from sea level to 6512 feet at Cuyamaca Peak.

## **2.2 GROUNDWATER**

The groundwater resources of the San Diego River Watershed are substantial and quality is generally good. Groundwater is currently pumped by private water purveyors (Danone Waters of North America in Lakeside [a.k.a., Sparklets] and Sierra Springs in eastern Mission Valley), and public water purveyors (Padre Dam, Riverview, and Lakeside Municipal Water Districts). Additionally, residential areas east of Ramona and Lakeside, and north of Alpine are generally groundwater-dependent for their drinking water sources; they are not part of the imported water distribution system administered by the San Diego County Water Authority. The City of San Diego has plans to install 12 ground water wells in eastern Mission Valley and use that water to augment their domestic supplies. This planned use is described in the City of San Diego Long-Range Water Resources Plan (2002-2030), Adopted December 9, 2002, City of San Diego Water Department.

Designated Beneficial Uses of the groundwater resources adjacent to, and west of Interstate-5 do not apply.

## **2.3 LAND USE AND POPULATION**

The San Diego River Watershed has a population of approximately 475,000 with major population centers in the Cities of Santee, El Cajon, and San Diego. Compared to the Otay, Penasquitos and Santa Margarita Watersheds, the San Diego River Watershed is a slow growing watershed. Some limited, new residential and commercial development is occurring as isolated pockets in Santee and Lakeside. The most notable, existing developed area is Mission Valley (Fig. 2-2), built within the river floodplain.

Approximately 58% of the San Diego River Watershed is currently undeveloped. The majority of this undeveloped land is in the upper, eastern portion of the watershed, while the lower reaches are more highly urbanized with residential (15%), freeways and roads (6%), and commercial/ industrial (4%) land uses predominating.

## **2.4 BENEFICIAL USES**

Designated beneficial uses for the San Diego River, and its tributaries, include municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), contact and non-contact water recreation (REC1 and REC2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), and rare, threatened, or endangered species (RARE).<sup>1</sup>

Beneficial uses designated for reservoirs and lakes within the San Diego River Watershed include the same designated uses named above.

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<sup>1</sup> Water Quality Control Plan for the San Diego Basin, San Diego Regional Water Quality Control Board. 1994.

Designated beneficial uses for ground waters within the San Diego River Watershed include MUN, AGR, IND, and PROC. Within the Lower San Diego Hydrologic Area, ground water beneficial uses do not apply westerly of the easterly boundary of the Interstate 5 right-of-way.

Designated beneficial uses for the mouth of the San Diego River include REC1, REC2, commercial and sport fishing (COMM), estuarine habitat (EST), WILD, RARE, marine habitat (MAR), and migration of aquatic organisms (MIGR).

### **3.0 SDRWQCB PROGRAMS AND STAFF ACTIVITIES**

The RWQCB administers many programs and staff activities that directly regulate water quality or assess ambient water quality. These include:

- Water Quality Assessment Programs
- Basin Planning
- Impaired Waters and TMDL Program
- Non-point Source Program
- Clean Water Act Section 401 Water Quality Certification Program
- NPDES Municipal Storm Water Permit
- NPDES Construction Storm Water Permit
- NPDES Industrial Storm Water Permit
- NPDES CalTrans Permit
- POTW Compliance Program
- Waste Discharge Requirements Program
- Environmental Cleanup Program

### **3.1 AMBIENT WATER QUALITY ASSESSMENT PROGRAMS**

Ambient monitoring and assessment of water quality and beneficial uses is essential in order to measure the success of the State Water Resources Control Board (SWRCB) and the RWQCBs in achieving their mission. Ultimately, the only meaningful measure of the success of the SWRCB and the RWQCBs is the condition of water quality and beneficial uses. The SDRWQCB currently coordinates three major monitoring programs: the Surface Water Ambient Monitoring Program (SWAMP), the Ambient Bioassessment Program, and the Toxic Substances Monitoring Program

#### **SWAMP Program**

The SWRCB and RWQCBs have received limited resources to initiate the SWAMP. Mandated by Assembly Bill 982, SWAMP requires the comprehensive assessment of the quality of surface waters throughout the state. The sampling and analysis is contracted to the California Department of Fish & Game. The assessment includes benthic macroinvertebrate sampling, water chemistry, water toxicity, and sediment toxicity. In the San Diego region, a watershed monitoring plan has been developed that utilizes a

tributary, synoptic design to assess water quality in the targeted watershed. In initiating the program, only two watersheds will be monitored as part of the SWAMP, ten sites will be monitored four times per year in the San Diego and San Luis Rey Watersheds when funding becomes available for the next round of SWAMP assessments. Staff have begun monitoring site selection and reconnaissance in the San Diego watershed. The major drainages that will be assessed in the San Diego watershed include the San Diego River, Boulder Creek, Chocolate Creek, Forester Creek, San Vicente Creek, and Alvarado Creek.

### **Ambient Bioassessment Program**

Beginning in 1997, staff developed and implemented an Ambient Bioassessment Monitoring Program with the following objectives: 1) assess the overall health of rivers and streams in the San Diego Region; 2) develop a diagnostic tool (Index of Biotic Integrity) for their future assessment; 3) provide baseline data to support the development of biological criteria. Monitoring took place in all of the San Diego region watersheds from 1998 through 2001. The California Department of Fish and Game, the contractor for this project, recently submitted the final report for the program. Included in the final report are a preliminary Index of Biotic Integrity (IBI) and an assessment of the biological and physical conditions of the rivers and streams. One significant conclusion in the report is that generally tributaries in the upper watersheds, are characterized by a high degree of biological and physical integrity (IBI was consistently "Very Good"). These can be considered reference sites. In comparison, the lower watersheds exhibited degraded biological and physical integrity (IBI ranged from "Very Poor" to "Good"). These drainages have been impacted are impacted by urban runoff, a live stream/reclaimed wastewater discharge, and non-point source pollution.

These reports can be accessed on the Regional Board website at:  
<http://www.swrcb.ca.gov/rwqcb9/programs/bioassessment.html>.

### **Toxic Substances Monitoring Program**

The SWRCB administered the Toxic Substances Monitoring Program (TSMP). The purpose of the program was to use salt water species (mussels, fish, crabs, etc.) and determine what types of pollutants are accumulating in those organisms. That information was used to advise people of what types of fish or shellfish to avoid eating, or to suggest limitations on consumption. The freshwater information was used to indirectly measure the pollutant load in a particular watershed. The TSMP was one of the longest running monitoring and assessment programs and proved very useful in identifying and tracking long term trends. In 2003, however, the TSMP was discontinued as a result of budget cuts. The TMSP is available at the State Board's website:  
<http://www.swrcb.ca.gov/programs/smw/index.html>.

There is a need for more extensive and more thorough monitoring and assessment of the waters in the San Diego River Watershed. Monitoring and assessment, for both status and

trends, need to be further planned and implemented in spite of budget set backs. Obtaining adequate funding to conduct adequate ambient water quality assessment programs is now one of the top priorities of the RWQCB. Monitoring and assessment is not and does not need to be conducted only by the RWQCB. Academic and other research groups, dischargers, water districts, and other stakeholders all have a role in monitoring and assessment. Although there is certainly a need for more extensive and more thorough monitoring of the watershed, better coordination of monitoring efforts and better management of information is also needed in order to increase the value, usefulness, and accessibility, and use of data obtained from past, ongoing, and future monitoring efforts.

### 3.2 BASIN PLANNING

The 2003 Basin Plan Triennial Review, a process to list and prioritize potential Basin Plan amendments, is well under way. Approximately 100 proposals for addressing water quality issues through Basin Plan amendments were recently submitted by staff and the public. Of those submitted proposals, approximately 6% were submitted specifically for the San Diego River watershed. A work plan containing a list of prioritized proposals is being developed. Once completed, the workplan will be released to the public. Following a public hearing, the Regional Board will be asked to approve the priority list contained in the workplan through adoption of a resolution. The work plan will guide Basin Planning for the next three years.

### 3.3 IMPAIRED WATERS AND THE TMDL PROGRAM

In accordance with Clean Water Act section 305(b), the SWRCB and RWQCBs periodically compile an inventory of the state's major waters and an assessment of their water quality condition, using monitoring data and other pertinent information. This inventory is known as the Water Quality Assessment. Impaired waters are categorized in accordance with requirements of various Clean Water Act sections [e.g. 303(d), 304(m), 304(s), 304(l), 314, and 319]. Waters are categorized as: fully supporting the designated beneficial uses, threatened, partially supporting, not supporting or not assessed.

The 2002 EPA-approved CWA Section 303(d) List, Constituents and Waterbodies of Potential Concern for the San Diego River Watershed includes the following:

Waterbody	Impairments	Expected TMDL Date
Famosa Slough	Eutrophication	2007 to 2010
San Diego River (lower 20 miles)	Low dissolved oxygen, and elevated levels of bacterial indicators, fecal coliform, phosphorous, and TDS	2007 to 2010
Mouth of the San Diego River	Bacterial indicators	2007 to 2010
Forester Creek	Elevated levels of fecal coliform, pH,	2007 to 2010

	TDS	
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The Staff Report for the CWA Section 303(d) List of Impaired Waters – 2002 Update states that potential sources causing the phosphorus and other impairments are urban runoff, agriculture runoff, and other point and non-point sources). Complete 303(d) list information is available at <http://www.swrcb.ca.gov/rwqcb9/programs/303dlist.html>.

Through an enforcement action in 2001-2002, the SDRWQCB required the City of San Diego to investigate the sources of pathogenic impairments at the mouth of the San Diego River and to address obvious pathogenic sources (Figure 3-1). The City performed the necessary monitoring and source assessments. The City also cleaned up Dog Beach and enforced an existing City Ordinance that requires dog owners to cleanup after their dogs. These actions helped reduce pathogen loading. Monitoring data showed the pathogen concentrations dropped two to three orders of magnitude, bringing the bacterial concentrations to acceptable REC-1 Basin Plan objectives for swimming. Continued monitoring results demonstrating the restoration of REC-1 water quality objectives will result in removal of the Mouth of San Diego River (a.k.a. Dog Beach) from the Section 303(d) list.

### 3.4 NONPOINT SOURCE PROGRAM

As noted in the SDRWQCB's Watershed Management Approach, nonpoint source (NPS) pollution, which includes, but is not limited to, polluted runoff, is the leading cause of water quality impairment to surface and ground waters in the San Diego Region. NPS pollution comes from many diffuse sources and the distinction between point source and nonpoint sources is not always clear. This is particularly true regarding urban runoff, which is clearly diffuse and nonpoint in origin, but is typically channelized and discharged through discrete pipes into receiving waters. Because it is typically channelized, often through a vast network of underground pipes, urban runoff is legally considered a point source discharge and is increasingly addressed through regulations in municipal storm water permits. The complex relationship between the nonpoint source origin of urban runoff, and its point source discharge from discrete storm drainpipes, presents the SDRWQCB with both significant challenges and opportunities.

The conversion of undeveloped and agricultural lands to urban uses has the potential to increase nonpoint source pollution loads into already impaired water bodies and to cause impairments where they do not exist. The NPS impacts of these land use changes are often magnified by the changes in hydrology that are often associated with the use changes, e.g., increased runoff volumes and higher peak flowrates, as a result of increased percentage of impervious surface in watersheds (i.e., hardscaping). Impacts associated with urbanization and hydromodification include:

- Elimination of natural channels, including the loss of wetlands, wildlife, fisheries and riparian habitat;
- Increased sedimentation due to construction activities;



- Unmitigated changes in hydrology that upset the geomorphic equilibrium of streams, causing destabilization and erosion of channels and more frequent flooding;
- Introduction and perpetuation of non-native invasive species of plants and animals (from landscaping, aquaria, etc.);
- Increased pollutant loads associated with urban activity (nutrients, pathogens, pesticides, PCBs, PAHs, petroleum, salts, nitrates, metals, trash, sediment, etc.);
- Increased water temperatures; and
- Decreased natural water quality purification functions that could otherwise intercept and assimilate or detoxify pollutants.

California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988. A key element of the Program is the "Three-Tiered Approach," through which self-determined implementation is favored, but more stringent regulatory authorities are utilized when necessary to achieve implementation.

### **Tier One NPS Activities**

Tier one includes public education and outreach. SDRWQCB will continue to actively participate with local resource conservation districts, educational organizations, lagoon foundations, and others in providing information to the public on NPS pollution, the NPS program, appropriate management measures, and best management practices. Routine nonpoint source-related meetings attended by the Regional Board in the watershed are summarized in the following table:

<b>Group / Project / Organization Name</b>	<b>Lead Entity</b>
San Diego River Watershed Workgroup (Prop. 13 project) <a href="http://www.projectcleanwater.org/html/ws_san_diego_river.html">http://www.projectcleanwater.org/html/ws_san_diego_river.html</a>	County of San Diego
San Diego River Coalition <a href="http://www.sandiegoriver.org/san_diego_river_coalition.htm">http://www.sandiegoriver.org/san_diego_river_coalition.htm</a>	San Diego River Coalition
San Diego River Park Foundation <a href="http://www.SanDiegoRiver.org">http://www.SanDiegoRiver.org</a>	San Diego River Park Foundation
MS4 Copermittee Meetings <a href="http://www.projectcleanwater.org/html/copermittees.html">http://www.projectcleanwater.org/html/copermittees.html</a>	County of San Diego

The SDRWQCB will also continue to support Tier One activities through active participation in the development, review, selection, and management of grants. The SDRWQCB assists project proponents to develop worthwhile proposals in the watershed for federal funding available under Clean Water Act Sections 104(b)(3), 106, 205 (j) and 319 and state funding under the State Revolving Fund, and the Costa-Machado Water Act of 2000 (Proposition 13). The following grants have been funded and are currently active in the San Diego River Watershed:

### **2001-2002 Proposition 13, First and Second Round,**

**Awarded Watershed Protection and Nonpoint Source Grants**

<b>Applicant</b>	<b>Project Title</b>	<b>Funding Program</b>	<b>Contract Amount</b>
County of San Diego Department of Environmental Health	San Diego River Watershed Management Plan <a href="http://www.projectcleanwater.org/html/ws_san_diego_river_plan.html">http://www.projectcleanwater.org/html/ws_san_diego_river_plan.html</a>	Prop. 13 WPP	\$197,500
Coastal Conservancy	Lower San Diego River Private Landowner Incentive Demonstration Project	Prop. 13 CNPS	\$800,000
Water District (San Diego River Park-Lakeside Conservancy)	San Diego River Park – Lakeside Conservancy: Restoration and Recharge	Prop. 13 WPP	\$1,290,725
Friends of Famosa Slough	Famosa Slough Wetland Restoration/Fill Removal	Prop. 13 CNPS	\$367,000

**2003 Proposition 13, Third Round,  
Watershed Protection and Nonpoint Source Grants,  
Applicants Invited to Submit Final Proposals**

<b>Proposal I.D. Number (PIN #)</b>	<b>Applicant Name</b>	<b>Project Title</b>	<b>Grant Program</b>	<b>Requested Amount</b>	<b>Invited RFFP Amount</b>
379	County of San Diego Department of Public Works	Woodside Avenue Low Flow Water Quality Basin and Arundo Removal	Proposition 13 Nonpoint Source (Southern)	\$1,275,000	\$1,000,000
441	County of San Diego Department of General Services	Porous Pavement and Model Municipal Operations Center Demonstration Project	Proposition 13 Nonpoint Source (Southern)	\$1,827,840	\$1,500,000
573	Riverview Water District	San Diego River Park - Restoration and Recharge - Phase II	Proposition 13 Watershed Protection Program - Small Communities with Financial Hardship	\$1,100,000	\$1,100,000
579	San Diego River Park Foundation	Riparian Habitat Enhancement Strategic Plan	Proposition 13 Watershed Protection Program - Planning	\$158,000	\$158,000
616	City of Santee	Forester Creek Improvement Project	Proposition 13 Watershed Protection Program	\$5,000,000	\$3,000,000

## **Tier Two NPS Activities**

Tier two activities use regulatory-based encouragement to promote the implementation of appropriate NPS management practices. These activities would include waiving adoption of waste discharge requirements on condition that the discharger or project proponent develops and implements effective best management practices (BMPs), and alternatively, the SDRWQCB may enforce BMPs by entering into an agreement with other agencies that have the authority to enforce BMPs. The projects and operations in the San Diego River Watershed involving SDRWQCB waivers include developments proposing subsurface disposal systems, agricultural irrigation water, nursery irrigation water, stream channel alterations, and green waste composting facilities.

## **CEQA Review**

The RWQCB is considered a Responsible Agency pursuant to California Environmental Quality Act (CEQA). However, with no budgeted allocation for this activity, staff have not been able to review and comment on most of the environmental documents submitted as part of the CEQA process. Consequently, the Regional Board has not been providing the project proponents with an early indication of our concerns and potential water quality issues associated with their proposals. Consequently, the Regional Board has lost opportunities to encourage and facilitate projects which incorporate measures to minimize the generation of the NPS pollutants and their effects.

The SDRWQCB did provide comments on the City of Santee's February 2002 draft EIR for the proposed Forester Creek Improvement Project (Figure 3-2). The project proposed improving Forester Creek to increase the flood-carrying capacity of the creek to a 100-year, 24-hour event to end the frequent flooding of nearby residences and businesses. The City of Santee proposed five alternatives, ranging from a fully concrete lined channel to a fully unlined channel; the City of Santee's preferred project included a combination of concrete and unlined channel. Upon receipt and review of the draft EIR, the SDRWQCB provided written comments on the proposed alternatives and met with City of Santee staff to inform them of our concerns. Through discussions with the City of Santee, and input from other resource agencies, the City developed another alternative that provided for flood control while allowing for a more natural channel design. The ability to provide input on the proposed project during the start of the process, rather than at the end (as is typical with 401 WQC applications) was fundamental to getting the project redesigned.

Between July 1, 2002 and June 30, 2003, the Regional Board received 37 CEQA documents for projects in the San Diego Watershed. Unfortunately, no written staff responses were sent regarding these documents. The 37 documents included 3 Draft EIRs, 1 EIRs, 13 Mitigated Negative Declarations, 8 Negative Declarations, 4 NOP EIRs, and 8 other NEPA/CEQA documents. Project proponents are much more receptive to comments at the start of their project, and project changes can be made more easily with

timely review of the draft CEQA documents. To fulfill our obligation as a Responsible Agency, and to proactively protect water quality and beneficial uses, the SWRCB and RWQCB need to find funding sources to meet this obligation.

### **Tier Three NPS Activities**

Although the SDRWQCB actively encourages self-determined implementation of NPS control measures and practices, the SDRWQCB has utilized waste discharge requirements and enforcement actions where Tier One and Two approaches were not appropriate. Enforcement actions have been taken for several kinds of activities, including new urban construction projects where there were inadequate erosion control measures, green waste storage sites, horse corrals with inadequate runoff protection, and commercial nurseries where there were inadequate measures to prevent the discharge of contaminated irrigation runoff. Specific Tier Three Activities are discussed in the following sections.

## **3.5 WATER QUALITY CERTIFICATION PROGRAM**

Waters of the U.S. (marshes, wetlands, streams, rivers, lagoons, vernal pools, unvegetated streams, etc.) provide habitat for many species of biota and provide water quality protection functions for downstream waters. A large percentage of waters of the U.S. in the watershed have been lost or degraded as a result of dredging, filling, and other physical modifications. This is most evident in the western watershed (Mission Valley) where the San Diego River and its tributaries have been modified to an extreme (Figure 3-3). Most water quality functions, values, and benefits have been impacted in the western watershed due to land use decisions and development.

### **Wetland and Riparian Functions, Values, and Beneficial Uses**

The following table provides examples of how wetland and riparian functions and values correlate with the beneficial uses of water within the regulatory purview of the State Water Resources Control Board and all the Regional Water Quality Control Boards.

<b>FUNCTION</b>	<b>VALUE</b>	<b>BENEFICIAL USE<sup>1</sup></b>
<b>WATER STORAGE AND RETENTION</b>	Groundwater recharge	GWR
	Attenuate flood flows, flood damage protection	Multiple; e.g., WARM, WILD, REC-2
	Maintain summer stream flows	Multiple, e.g., WARM, COLD, WILD
	Water supply source	FRSH, MUN
	Shoreline Stabilization	Multiple, e.g., REC-2, WARM, WILD

	Maintain fresh and salt water balance in estuaries	Multiple, e.g., SHELL, MAR, WILD
	Photography, aesthetic appreciation, recreational boating, other recreation, scientific study, education	REC-2
	Livestock watering	AGR
<b>SEDIMENT AND NUTRIENT RETENTION AND CYCLING</b>	Sediment and pollutant removal	Multiple, e.g., FRSH, WARM, REC-1, REC-2
	Ecosystem support, e.g., sequestering C; cycling of N, S, CH <sub>4</sub> , CO <sub>2</sub>	Multiple, e.g., REC-2, WARM, WILD
<b>SUBSTRATE FOR BIOTA</b>	Habitat for fish and other aquatic biota	Multiple, e.g., WARM, COLD, SPAWN
	Habitat for waterfowl and other terrestrial wildlife	WILD
	Shellfish production	SHELL
	Streambank stabilization	Multiple, e.g., REC-2, WARM, WILD
	Support endangered species	RARE
	Spawning and nursery habitat	MAR, SPAWN
	Nature study, birding, hunting and fishing	REC-2

Avoidance and minimization of impacts to natural drainages is the most common obstacle to overcome in water quality certification (WQC) applications in the watershed. Most applications propose some sort of channelization or filling of natural drainages which results in the reduced functions, values, and beneficial uses described in the preceding table. Avoiding drainages and incorporating flood water detention basins on site uses more land than most land developers are willing to concede. In nearly all cases, proposed developments maximize the number of lots and channelize natural drainages so they can serve as flood control channels in order to meet the requirements of the local flood control agency.

Even after a lengthy review and negotiation process, these projects usually result in some type of channelization or impacts to natural drainages that will eventually lead to the cumulative degradation of the remaining natural water resources in the watershed. Segment by segment, tributaries are either being filled, or significantly modified into flood control channels. In addition to destroying the natural resources in the area, these traditional development and flood control practices will increase the frequency and size of flooding and increase impacts to natural drainages downstream.

Some other examples of local agency requirements that conflict with the water quality protection goals of the WQC program are listed below:

- Bridge designs – reliance on less expensive construction methods such as culverts instead of the construction of free span bridges;

- Maximum right-of-ways – unwillingness to reduce road widths or incorporate alternate road designs to reduce impacts;
- Traditional site design and engineering practices – unwilling to try and/or approve new designs that reduce impacts;
- Ordinances requiring certain practices – such as channel vegetation clearing; and
- Land use density requirements.

Due to the lack of resources, staff is extremely limited in conducting compliance investigations of WQC projects to determine the rate of success of required mitigation, or the cumulative impacts that are occurring in the watershed. The US Army Corps of Engineers, however, did conduct a study of the cumulative impacts of Section 404 permitting on the ecology of the Santa Margarita Watershed. The study concluded that Section 404 permitting has failed to protect aquatic resources in the watershed.

Approximately 74% of the acreage impacted has resulted in substantial adverse or adverse impacts to water resources, and less than 1% of the affected acreage resulted in enhancement.<sup>2</sup> The greatest impacts have been the disruption of wildlife movement corridors and floodplain encroachment. Constriction of streams within steep sided channels isolates them from adjacent uplands, limiting dynamic riparian processes such as overbank seed dispersal, and precluding movement of organisms between upland and riparian habitats.<sup>3</sup> These types of adverse impacts will continue unless proposed development plans avoid and minimize impacts to water resources and include measures to protect water quality.

Written guidelines, if not from policies, established by the Regional Boards, prohibiting channelization and other similar activities would facilitate the 401 WQC application process for SDRWQCB staff and applicants, and would most likely result in the implementation of effective measures to improve water quality.

### **3.6 MUNICIPAL STORM WATER**

Order No. 2001-01 (NPDES Permit No. CAS0108758), was adopted by the Board on February 21, 2001. Order 2001-01 establishes requirements for the discharge of urban runoff by the County of San Diego, all the cities within the County, the San Diego Unified Port District and the San Diego County Regional Airport Authority (Copermittees).

The MS4 permit includes post-development storm water management requirements, similar to the Standard Urban Storm Water Mitigation Plans (SUSMPs) required in many other nearby areas. The SUSMPs require the treatment and detention of storm water runoff and typically include the regulation of post-development runoff rates. This would discourage channelization and promote low impact development. As part of the WQC

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<sup>2</sup> Stein, Eric, US Army Corps of Engineers. Assessment of the Cumulative Impacts of Section 404 Permitting on the Ecology of the Santa Margarita, CA Watershed

<sup>3</sup> Harris and Gosselink. 1990. Cumulative Impacts of Bottomland Hardwood Forest Conversion on Hydrology, Water Quality, and Terrestrial Wildlife in Ecological Processes and Cumulative Impacts.

process, the Regional Board determines if the project is subject to the SUSMPs. If the project is not subject to SUSMPs, then the WQC certification will require SUSMP equivalency.

During this past year, the Regional Board has increased the oversight of the San Diego County MS4 permit. Evaluations of each Copermittee's program within the watershed has been conducted. Overall, each Copermittee has complied reasonably well with the new permit by adding staff, programs, and commitments. However, since the requirements of the San Diego Municipal Storm Water Permit have only been implemented for approximately 18 months, it is too early to identify what impact implementation of the permit's requirements has had on water quality. In general, the high spatial and temporal variability of the monitoring data prevents us from statistically identifying water quality trends at this early date. Over time, as more monitoring data is collected, water quality trends resulting from implementation of the permit should become discernable.

### **3.7 CONSTRUCTION STORM WATER**

Approximately 130 construction sites in the San Diego River Watershed are currently regulated under the Statewide Construction Storm Water Permit (Phase I and Phase II) on an annual basis. Staff has observed an increase in voluntary compliance with the requirements by developers in the area. The improved compliance record is a result of SDRWQCB and local regulatory staff having a strong field presence during 2001-2002. Staff inspected more than 30 construction sites in the lower watershed during the rainy season of 2001-2002. Notices of Violations (NOVs) were issued by the Regional Board to approximately 15 permitted sites, NOVs to 5 non-filer sites, and 3 Notices to Comply to sites for minor violations. Major construction activity occurs in isolated pockets, as most of the easily developed areas have already been developed. In general, the San Diego Watershed is one of the least active construction watersheds in the San Diego Region due to the "built-out" nature of the lower watershed.

### **3.8 INDUSTRIAL COMPLIANCE UNIT**

The Industrial Compliance Unit oversees the permitting, compliance and enforcement issues related to NPDES, WDR and other industrial facilities within the San Diego Region, including facilities subject to storm water permits. The total number of industrial facilities in Region 9 includes five power plants, three shipyards, three Navy complexes, ten boatyards, 23 sand and gravel facilities, and other industrial facilities. The Unit also oversees groundwater extraction activities, confined animal facilities and aquaria, and the statewide utility vault permit. There are currently about 675 industrial facilities within the entire Region 9 area enrolled under the general industrial storm water permit. Industrial facilities in the San Diego Watershed with individual non-storm water orders are summarized in the table below.

**San Diego Watershed Industrial Facilities with Individual WDR Orders**

<b>Facility Name</b>	<b>Unit</b>	<b>WDR Order No.</b>
Former EZ Serve Station, 100800	907.xx	01-096
Superior Mission Gorge	907.11	88-016
Hanson's Mission Valley	907.11	94-032
Calmat Mission Valley Plant Complex	907.11	93-119
Kinder Morgan (SFPP) Mission Valley Terminal Remediation	907.11	01-096
Hazard Center Associates Hazard Center Drive Ext. Construction Dewatering	907.11	01-096
City of San Diego Hazard Center Drive Extension -Perm. Dewatering	907.11	01-096
RCP Block & Brick, Inc.	907.12	95-017
Hanson's-Channel Road	907.12	88-065
Calmat Lakeside Sand Plant	907.12	93-120
Caster Group, Lakeside Sand Plant	907.12	88-107
Southland Corporation 7 -Eleven Loc. 20611-Santee	907.12	01-096
Van Ommering, G C R D, Van Ommering Dairy	907.15	94-134
Samuel Zands-725 East Bradley El Cajon	907.15	01-096
Hanson's Slaughterhouse Canyon	907.2	94-006
Ramona MWD, WWTP Construction	907.23	01-096

**San Diego Watershed Industrial Facilities Covered by General Industrial Storm Water Permit, Order 97-03 DWQ**

<b>Facility</b>	<b>Location</b>	<b>City</b>
Buck Knives Inc	1900 Weld Blvd	El Cajon
Allied Casting	983 Vernon Way	El Cajon
Carpenter Special Prod Corp	1717 Cuyamaca St	El Cajon
Windowmaster Products	1111 - 1155 Pioneer Wy	El Cajon
Gillespie Field	1960 Joe Crosson Drive	El Cajon
El Cajon Dave	800 Fesler Street	El Cajon



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Universal Refuse Removal	1001 W. Bradley Ave	El Cajon
PSM Truck Equipment	755 Vernon Way	El Cajon
Chem-Tronics, Inc.	1150 W. Bradley Ave	El Cajon
Pacific Treatment Environmenta	1452 N. Johnson Ave	El Cajon
Alturdyne	660 Steele St.	El Cajon
Certified Metal Craft Inc	877 Vernon Wy	El Cajon
East County Bus Maintenance Facility	1213 N Johnson Ave	El Cajon
California Metals	636 Front Street	El Cajon
Safety Kleen Systems Inc	197 Vernon Wy	El Cajon
Lekos Electric Inc	1370 Pioneer Wy	El Cajon
Precision Metal Prod	850 W. Bradley Ave.	El Cajon
Gillespie Landfill	1780 Gillespie Way	El Cajon
California Metals	297-333 South Marshall Ave	El Cajon
Decco Castings Inc	1596 Pioneer Wy	El Cajon
Artimex Iron Co Inc	315 Cypress Ln	El Cajon
Toro Agricultural Irrigation	1588 N. Marshall Ave	El Cajon
San Diego Van & Storage	1426 Fayette St	El Cajon
Triumph Components San Diego	203 N Johnson Ave	El Cajon
El Cajon Auto Wrecking Inc	1416 Pioneer Wy	El Cajon
Construction Machinery Inc	1475 Pioneer Wy	El Cajon
The Fonda Group Inc	1160 Vernon Wy	El Cajon
Daves Custom Boats	1468 W. Magnolia Ave	El Cajon
Grossmont Union H.S. District	1100 Murray Dr	El Cajon
El Cajon (Main)	401 West Lexington	El Cajon
Dixieline El Cajon	1262 E. Main St	El Cajon
D&M Miller Trucking, Inc.	15409 Olde Hwy 80	El Cajon
Senior Flexonics Ketema Div	790 Greenfield Dr	El Cajon
Tunnel Hill Granite Pit	13080 Old Hwy 80	El Cajon
Cajon Valley Union Sch Dist.	777 East Park Blvd.	El Cajon
Edco Station	8182 Commercial Street	La Mesa
Dixieline La Mesa	8372 Center Dr	La Mesa
John R Frederickson	12538 Vigilante Rd	Lakeside
Bill Signs Trucking Inc.	10329 Channel Rd	Lakeside
Hawthorne Rent It Service	12329 Maplevue St	Lakeside
Southland Ready Mix	12117 Industry Rd	Lakeside
Quality Auto Recycling	12650 Highway 67	Lakeside

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Channel Rd	10322 Channel Rd	Lakeside
El Monte Sand	14054 El Monte Rd	Lakeside
Hwy 67 Quarry	12535 Highway 67	Lakeside
Cactus Park Burnsite	East Of Ashwood St	Lakeside
Minshaw Bros Steel Const Inc	12578 Vigilante Rd	Lakeside
Mcgrath Sand Quarry	12455 Willow Rd	Lakeside
Pioneer Concrete	12560 Highway 67	Lakeside
T.T.T. Concrete	12494 Highway 67	Lakeside
Community Auto Recyclers Inc	12650 Highway 67	Lakeside
Highway 67 Trucks Dismantlers	12650 Highway 67	Lakeside
Als Auto Wrecking	12650 Hwy 67	Lakeside
Clark Steel Fabricators Inc	12610 Vigilante Rd	Lakeside
Pupil Transportation Facility	9707 Marilla Dr	Lakeside
Ameron Conc & Steel Pipe Group	10441 Vine St	Lakeside
Eagle Auto Dismantling	126501/2 Highway 67	Lakeside
Hanson Aggregates Psw Region	12560 Hwy 67	San Diego
Valley Metals	13125 Gregg St	San Diego
Sycamore	14494 Mast Blvd	San Diego
San Diego Transit	4630 Ruffner St.	San Diego
Hawthorne Rent It Service	1473 G St	San Diego
Equilon Mission Valley Termina	9950 San Diego Mission Road	San Diego
Mission Valley	5745 Mission Center Road	San Diego
Equilon San Diego Terminal	9966 San Diego Mission Rd	San Diego
Hanson Aggregates	5785 Mission Center Rd	San Diego
WD-40 Company	1061 Cudahy Place	San Diego
Emery Worldwide San	5255 Lovelock Street	San Diego
Paper Recovery of San Diego	5222 Lovelock Street	San Diego
BCI Coca-Cola Co of La	5330 Linda Vista Road	San Diego
Dixieline Lumber Co	3250 Sports Arena Blvd	San Diego
Hawthorne Power System	8050 Othello St.	San Diego
Pacific Waste Services	8364 Clairemont Mesa Blvd	San Diego
United Parcel Service	7925 Ronson Rd.	San Diego
Alturdyne	8050 Armour St	San Diego
Dixieline Kearny Mesa	4888 Convoy Street	San Diego
Pepsi Cola Company	7995 Armour St	San Diego
San Diego Office of Education	6401 Linda Vista Road #211	San Diego

San Diego Ready Mix	7500 Mission Gorge Road	San Diego
Infinity Outdoor	4450 Alvarado Canyon Rd	San Diego
Van Can Company	9045 Carroll Way	San Diego
Overnite Transportation Co	7191 Carroll Road	San Diego
Presidio Components Inc	7169 Construction Ct	San Diego
Petrochem Marketing Inc	9255 Camino Santa Fe G	San Diego
Sycamore Landfill Inc	14494 Mast Blvd	San Diego
Electro Mold And Castings	9247 Mission Gorge Rd	Santee
Sycamore Canyon Rock Plant	8514 Mast Blvd	Santee
J L Davidson Company, Inc.	8641 Magnolia Avenue	Santee
R.C.P. Block & Brick Inc.	9631 North Magnolia Avenue	Santee
Bill Hanvey	9353 Abraham Way	Santee
Cal Custom Manufacturing	9366 Abraham Way	Santee
Pete Sciarrino	10051 Prospect Ave	Santee
European Natural Stone Co Inc	10151 Prospect Ave	Santee
East Mission Gorge Pump Statio	15390 Mission Gorge Rd	Santee
Valley Box Company Inc	8544 Tumbleweed Terrace	Santee
Santee School Dist Bus Mainten	9880 Hoffman Lane	Santee
Padre Dam Water Recycling Fac	Fanita Parkway (North)	Santee
Roadway Express	10775 Rockvill St.	Santee
Vortex Engineering	9201 Isaac St # A	Santee
San Diego Precast Concrete	9702 Prospect Ave	Santee
Harrison Trucking, Inc.	8801 Olive Lane	Santee
Circle Master Inc	8747 Magnolia Ave	Santee
Cal Custom Manufacturing	10848 Wheatlands Ave	Santee

### **Superior Ready Mix – Mission Gorge**

The following discussion regarding Superior Ready Mix is included in the report due to the nature of the facility, its location in adjacent to the San Diego River and its impacts on the San Diego River from a recent, unauthorized discharge.

Superior Ready Mix (SRM) is a large mining, aggregate, and concrete facility in the gorge of the Mission Gorge area (Fig. 3-4). SRM flanks the San Diego River for most of the property length. In February 2001, San Diego City aerial surveys revealed that a significant amount of boulders and rock had been discharged to the flowing section of the San Diego River, causing the river to change course (Figs. 3-5 and 3-6). This course change threatened the integrity of the City's sewage trunk line whose alignment follows the main channel of the river bed. The City was concerned that manhole risers would

break open due to the force of the river, allowing as much as 21 million gallons per day of raw sewage to be discharged.

Emergency actions by the City to armor the manhole risers temporarily stabilized the situation. Rapid and simultaneous enforcement actions by the SDRWQCB, the California Department of Fish and Game, and the U.S. Army Corps of Engineers against SRM to remove the discharged rock material further stabilized the river flow in the area of the sewer line.

To date, SRM has cleaned up the discharge and has nearly restored the river morphology and habitats to pre-discharge conditions. Staff will continue to oversee the restoration effort.

### **3.9 CALTRANS**

Runoff from Caltrans highways and facilities is regulated pursuant to State Board Order No. 99-06-DWQ. Staff routinely meets with staff from District 11 (San Diego) to discuss storm water issues related to projects in the watershed.

The largest current project in the watershed is the construction of State Route 125 near Navajo and Grossmont College Roads scheduled for completion around January of 2005. This project has been inspected by the Regional Board several times. A Notice to Comply was issued last October and a discharge of sediment was reported in December 2002.

A landscaping project is underway on Interstate 15 from Friars Road to Balboa Avenue. This project is entering its first rainy season and has not been formally inspected.

An extension of State Route 52 is planned to begin around September of 2004. Construction staging for this project has already commenced.

### **3.10 POTW COMPLIANCE PROGRAM**

There are six Publicly Owned Treatment Works (POTWs) that treat domestic sewage in the watershed.

#### **NPDES Facilities**

The NPDES program regulates the discharge of pollutants from point sources to surface waters. The only NPDES permitted facility that discharges directly to surface water in the San Diego River Watershed is the Padre Dam MWD, Padre Dam Water Recycling Facility (PDWRF). PDMWRF discharges intermittently a maximum of 2.0 million gallon per day of tertiary treated wastewater to the San Diego River from the Santee Recreational Lakes. PDMWD currently monitors six receiving water stations along the San Diego River on a biweekly to quarterly basis. Monitoring parameters include, but

are not limited to, total dissolved solids (TDS), dissolved oxygen (DO), total/fecal coliform, chlorine, nutrients, macroinvertebrates, fish tissue, toxicity, and bacteria.

### **Water Reclamation Facilities**

The Ramona MWD San Vicente Water Reclamation Facility (RMWD), Barona Water Reclamation Facility, William Heise Park (near Julian), and the Julian Water Pollution Control Facility are only permitted to discharge to land. The Barona facility is regulated by the U.S. Environmental Protection Agency as it is located on tribal lands.

### **Sewage Collection Facilities**

The municipal sewage collection systems are regulated through Waste Discharge Requirement Order No. 96-04. All cities, the county or special districts who collect sewage via a piping system, must comply with this order.

### **Sewage Spills**

The number of sewage spills in this watershed for a given period of time is difficult to determine because reported sewage spills are not tracked by hydrologic unit. However, one of the largest sewage spills in this Region occurred from February 21 to February 28, 2000 by the City of San Diego in the Adobe Falls area in San Carlos. The Adobe Falls spill discharged a total of 34,000,000 gallons of sewage to Alvarado Creek and the San Diego River.

## **3.11 WASTE DISCHARGE REQUIREMENT PROGRAM**

Waste discharge requirements (WDRs) are issued to waste discharges to land from point and nonpoint sources and to certain fill discharges to surface waters from sources that are not subject to NPDES permits. Currently, there is one active landfill (Sycamore Canyon), two burnsites, one inactive landfill, one unclassified landfill, five onsite septic disposal systems (campgrounds, RV and mobile home parks), and sixteen industrial facilities subject to WDRs.

### **WDR Septic Tank Discharge Facilities**

<b>Facility Name</b>	<b>WDR No.</b>	<b>File No.</b>	<b>WDID No.</b>
Stallion Oaks Ranch	94-115	07-039.01	9 000000339
Pinecrest Park	86-48	07-0288.01	9 000000288
Dos Picos Park	94-107	07-0121.01	9 000000121
Country Creek RV Resort	95-04	07-0095.01	9 000000095

Pinezanita Trailer Ranch	94-13	07-0071.01	9 000000071
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### **Discharge of Fill to Surface Waters**

The discharge of fill to surface waters is an example of a discharge that is not subject to NPDES permits, but is subject to State WDRs. As discussed in the above section on wetlands, such discharges are required to obtain a Section 401 water quality certification. However, the certification program lacks the program resources to conduct full evaluations of all project proposals and the subsequent assessments of project compliance and mitigation success. Consequently, the SDRWQCB authority in the WDR program is used to regulate projects proposing the discharge of fill.

## **3.12 ENVIRONMENTAL CLEANUP PROGRAMS**

### **Site Mitigation and Cleanup Unit**

The SDRWQCB's Site Mitigation & Cleanup (SMC) Unit is responsible for soil and ground water cleanup of Department of Defense (DOD) and Spills, Leaks, Investigation, and Cleanup (SLIC) sites. The SMC Unit also track the progress of known DOD Underground Storage Tanks (UST) releases. The SMC unit enforces the policies and procedures for the investigation, cleanup and abatement of discharges under the California Water Code, Section 13304. The Regional Board provides regulatory oversight for various types of contaminated sites in the above referenced programs, and interface with local, state and federal agencies to resolve water quality issues.

Currently there are only the following two sites in the watershed:

#### MCAS Miramar Facility

Former Sycamore Canyon Atlas Missile Test Facility where polyvinyl chlorides were discharged to soil from a damaged electrical transformer. The facility is located approximately 5 miles east of I-15, on east MCAS Miramar property.

#### Mission Valley Tank Farm

Over ten years ago, gasoline discharges were discovered at the Mission Valley Terminal (tank farm) located north of Qualcomm Stadium and adjacent to Murphy Canyon Creek. Currently Mission Valley Terminal is monitoring, investigating, and cleaning up the gasoline and dissolved gasoline components in soil and groundwater at the terminal. A groundwater and soil vapor extraction system is operating in the stadium parking lot to cleanup free-phase gasoline and contain the dissolved phase components in the groundwater. The discharger is also monitoring groundwater to ensure the extraction system is stabilizing and reducing the groundwater contamination, and to determine if the dissolved MTBE plume that has escaped containment is naturally attenuating.

Additionally, the final phase of the aboveground storage tank and piping leak detection system will be installed and tested by October 2003.

### **Tank Site Cleanup and Mitigation Unit**

California has been regulating underground storage tanks (USTs) containing hazardous substances since 1983, applying federal and state laws, regulations and policies. The SWRCB is the designated lead regulatory agency for the development of UST regulations and policy. The three primary elements of the UST Cleanup Oversight Program are prevention, cleanup oversight, and cleanup reimbursement. The Regional Board's Tank Site Mitigation & Cleanup (TSMC) Unit provides technical and regulatory oversight for the investigation and cleanup of sites impacted by leaking USTs, and develops local guidance on implementing the policies and procedures of the SWRCB. Along with the three county local oversight program agencies in the San Diego Region, TSMC Unit of the Regional Board documents and tracks the process of cleaning up all known UST releases within our region.

### **Julian Aquifer Contamination**

The town of Julian, located in the upper San Diego River Watershed, has suffered from gasoline contaminated ground water for at least 15 years and probably longer. Julian is a ground water dependent community. In 1989, the County of San Diego required Chevron to investigate and cleanup the subsurface gasoline discharge, as the discharge was found to be contaminating the town's drinking water wells. Chevron also volunteered to truck-in potable water for the town for a limited time. Subsequently, three other parties in town were also found to be contributing to the ground water contamination.

Over the last 10 years, all the parties have cooperatively investigated and performed cleanup activities under a joint Cleanup and Abatement Order issued by this Regional Board. Currently, the ground water beneath the town is still contaminated, but at much lesser concentration levels. The highest ground water contamination levels currently are 6300 parts per billion (ppb) for Total Petroleum Hydrocarbons, 310 ppb for benzene, and 70 ppb for MTBE. Consultants for Chevron and the other parties have estimated that it may take up to another 10-12, and possibly longer, to clean up the Julian's aquifer.

Over the last 10 years, the town's water district has secured an alternative drinking water source aquifer in a nearby valley.

## **4.0 SIGNIFICANT WATER QUALITY ISSUES IN THE WATERSHED**

The lower San Diego Watershed is the most altered river system in our region resulting in degraded water quality and degraded beneficial uses. Most of the water quality problems (surface and ground water) occurring in the lower watershed--downstream of the El

Capitan Reservoir--are the result of urbanization and hydromodification. These two stressors have caused surface and ground water degradation to occur primarily over the last 50 years and have resulted in significant impacts to designated beneficial uses. The following is a brief summary of some of the significant water quality issues within the lower watershed:

1. San Diego – Over the last 50 years, business and industry have been encouraged to locate within the floodplain of the San Diego River. These areas are the Mission Gorge and Mission Valley areas. These businesses and industries (retail, business buildings, fuel tank farms, aggregate mining, heavy equipment storage) have significantly altered the morphology of the river to the point where the river has lost most of its pollution assimilation functions, habitats, and beneficial uses. As a result, these areas suffer from low dissolved oxygen levels and elevated concentrations of TDS, nutrients, microbiologic contaminants, pesticides, trash and localized ground water contamination. Also, as previously discussed, this area has suffered from recent discharges of raw sewage from an aging sewage collection system, with the Adobe Falls spill (February 2000) being one of the largest on record for this Region.
2. El Cajon – The City of El Cajon has placed nearly all streams within their jurisdictional control within concrete lined channels. This lining has led to increased water temperatures, larger peak flood flows, and no pollution assimilation functions. Additionally, this area is one of the larger areas for trash deposition into the watershed's surface waters (e.g. Forester Creek).
3. Lakeside - Drinking water aquifers have been adversely affected by gasoline plumes containing MTBE and carcinogens, and several drinking water wells were precautionarily taken out of service. Also, industrial zoning along the river banks have allowed the proliferation of heavy equipment storage and maintenance. Heavy equipment storage adjacent to the San Diego River affects water quality by introducing TDS, oil, grease and fuels, increasing impervious surfaces, and removing riparian buffers. Hydromodifications and aggregate mining have contributed to elevated levels of total dissolved solids (TDS), adverse changes to hydrology, and habitat loss.
4. Santee – Most areas adjacent to the river have been developed. Significant water quality impacts within this area come from aggregate mining operations, Forester Creek trash (downstream of El Cajon), golf courses (nutrients, pesticides, elevated water temperatures), and Padre Dam MWD Water Reclamation Facility (nutrients and a contributor of excess water volume to an otherwise semiarid riverine system).

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

Because of land development and geography, the overall water quality in the San Diego Watershed must be described as two, separate parts--the upper and lower watersheds.



## **5.1 UPPER WATERSHED**

### **Status**

The upper watershed is generally undeveloped and the water quality is very good. The upper watershed extends from El Capitan reservoir (8 miles east of Lakeside) to Cuyamaca Lake and the town of Julian. The surface drainage of the upper watershed are directed to, and almost entirely contained in, the City of San Diego's El Capitan Reservoir. Aside from the contaminated Julian aquifer, surface and ground water quality is very good. The surface water quality of the upper watershed is so good, that the SDRWQCB is currently evaluating placing reference sites for ambient water quality monitoring within the area.

### **Recommendations**

To protect the existing water quality in the upper portion of the watershed, the SDRWQCB should:

- Continue oversight of regulated septic tank waste and small waste water facilities (campgrounds, parks, RV parks, etc.) and the cleanup of the Julian aquifer.
- Increase oversight of section 401 Water Quality Certification applications to ensure the continued health of the surface waters and to minimize hydromodifications that lead to decreased water quality and the loss of beneficial uses.

## **5.2 LOWER WATERSHED**

### **Status**

The lower watershed is generally developed and surface water quality is generally poor. The lower watershed generally extends from El Capitan Reservoir to the mouth of the San Diego River. Aside from isolated pockets of contamination, ground water quality is good and many water districts use the ground water for drinking water sources.

Surface water quality in the lower watershed is generally poor due to anthropogenic contamination sources. Typical contaminants include elevated levels of microbiologic indicators, TDS, pH, pesticides, metals, petroleum, and trash. These often result from direct discharges (pesticides, fertilizers, homeless, leaking sewage collection systems, cars, farms, industries, golf courses, etc.) and from hydromodifications. Hydromodifications reduce the pollution assimilation functions in receiving waters and tend to concentrate the contaminants.

### **Recommendations**

To prevent further degradation of water quality in the lower portion of the watershed, the SDRWQCB should:

- Encourage continued improved compliance with Municipal, Construction and Industrial Storm Water permits.
- Encourage the avoidance of additional hydromodifications and encourage those jurisdictions to remove existing hydromodifications where feasible.
- Encourage Cities and jurisdictions to change land use policies and practices to improve water quality (or at a minimum, maintain existing water quality with a growing watershed population).
- Continue and increase working with the Cities, the County, dischargers, and developers to encourage and explore alternative land use strategies, alternative site use designs, and construction techniques that foster improved water quality.